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Interest-Free Banking, Profit-Sharing and the Islamic Macroeconomic System

ZAIDI SATTAR*

"But Allah hath permitted trade and forbidden usury."

- Al Qur'an, II, 275

"Allah will deprive usury of all blessing, but will give increase for deeds of charity."

- Al Qur'an, II, 276

1. INTRODUCTION

The Holy Qur'an is categorical in its denunciation of the practice of usury, primarily due to the exploitative character of the transaction involved. Usury carries the connotation of an exorbitant rate of interest charged by the lender thereby imposing an unfair burden of debt on the borrower. Such practice has been the hallmark of informal credit markets throughout the developing world¹, including most of the Muslim countries.

However, the intriguing question confronting modern Islamic economies and societies today is whether 'interest' as is prevalent in the formal financial markets is to be con-

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sidered no different from usury and is, therefore, impermissible. Although Muslim scholars have expressed conflicting opinions* on the subject², there seems to be overwhelming support in favour of the abolition of interest from the banking and financial system if that were practicable.**

"Oye who believe. Fear Allah, and give up what remains of your demand for usury, if ye are indeed believers".

Al Qur'an, II. 278

Following the above exhortation of the Qur'an, Pakistan and the Islamic Republic of Iran have pioneered complete conversion of their banking systems away from interest-based banking to interest-free banking. Since the middle 1970s, interest-free banks have been established and operated alongside conventional banks in over 40 Muslim countries.

2. PROFIT-SHARING UNDER INTEREST-FREE BANKING

The following analysis will proceed under the assumption of a hypothetical interest-free Islamic economic system, where lending, borrowing, and investing activities occur not under interest-based arrangements but under the acceptable alternative of profit-sharing. The nature of these profit-sharing arrangements within the framework of an Islamic banking system is described below.

Firms and entrepreneurs raise investible funds from two possible sources: (a) first, there are '*mudarabah*' loans

* No reputed Islamic jurist or scholar holds the opinion that Bank interest is different from Riba except Abdullah Yusuf Ali (quoted in footnote) who lived in an age when apologia for Islam was considered as a necessary service for the Muslim community as is amply borne out by his positions on a number of important statements of the Holy Quran, Jihad being one of them. A few other apologetics also held that opinion, but their status as Islamic jurist or scholar was never recognised (ED).

** Abolition of interest does not depend upon its practicability. It is an injunction of the Qur'an that has to be followed irrespective of its feasibility (ED).

from commercial banks. These are interest-free loans* whereby banks share in the profits of enterprise at a pre-determined rate.** say, b , which is called the bank's rate of profitshare. If p^e is the entrepreneur's expected rate of profits², the bank's share of the profits is ' bp ', while $(1-b)p$ is the net profit of the entrepreneur. Losses, if any, are borne entirely by the lender, in accordance with the rules of lending laid down by the Shariah. The cost to the entrepreneur in that event is his time and effort spent on a failed enterprise. (b) The second source of funds lies in the offering of equity/shares ('*musharakah*' certificates) to all intending participants that include individuals, other firms, commercial banks, and even the central bank. The consequence is the emergence of a 'stock' market consisting of transferable '*musharakah*' certificates (see Khan and Mirakhor (1986) whose price and implicit rate of return are determined by market forces. It may be noted, however, that there is no parallel of a bond market in the Islamic economic system.

Assets and Liabilities Position in the Islamic Financial System

Public		Banks		Central Bank	
Assets	Liabilities	Assets	Liabilities	Assets	Liabilities
Currency	Mud. credit	Res. (cash)	Deposits	Gold	Bank Reserves
Deposits	Mush. credit	Res (Cen.Bk)	Mud. Deposit	FE Res.	Currency
Mud. deposit		Mud Loans		Mush. Cert	
Mush.Cert.		Mush. Cert.			

The table describes the assets and liabilities position of the public and the banking system in an Islamic financial system:

* It is more appropriate to describe Mudharba capital as participation capital rather than interest free loan, since loan is only a charitable activity in Islam, and further, such capital does not have a cost in the sense of credit capital (ED).

** "Profit rate" is confusing; it is more appropriate to be predetermined profit ratio. See M.N. Siddiqui *Economics of Profit Sharing* p. 167. Fiscal Policy And Resource Allocation in Islam Ziauddin Ahmad and others (editors) Institute of Policy Studies, Islamabad 1983 (ED)

Banks, in turn, offer two types of accounts, deposit accounts and *mudarabah* accounts. The former are like checking accounts but with a nominal service charge to the depositor, while the latter make up the pool of investment funds to support the lending operations of the bank. Depositors with *mudarabah* accounts share in the bank's earnings, once again, at a rate pre-determined by the bank, say, d . The depositors' return is, therefore, dbp .¹

A careful examination of the relations stipulated above reveals that the key variable in an interest-free economic system is the financial rate of return from investments, namely, the profit rate. It is the movement in the expected rate of profit that would affect investment decisions, prices in the market for *musharakah* certificates, and the depositors desire to hold higher or lower money balances. It thus replaces the interest rate as the key player in the determination of output and aggregate demand in the Islamic economic system.

The role of interest rate in the Keynesian system is important albeit not necessarily critical. Keynes himself had downplayed the role of interest rates as the key determinant of investment levels, placing more emphasis on such real macroeconomic variables as output, income and employment. The Keynesian transmission mechanism, however, describes the linkage between the demand for money and the aggregate demand for goods and services via calibration of interest rates. Nevertheless, Keynes did express his reservation about the effectiveness of interest rates as the link in the causal chain. The grounds for such reservation were to be found in the interest-insensitivity of investment demand and the notion of the liquidity trap² associated with the money demand function – both of these arguments suggest the futility of using interest rates as a policy tool for macroeconomic stabilization.

It is interesting to note that Monetarism, as a critique of Keynesianism, opposed the idea of policy activism for the purpose of short-term macro stabilization. It was money, however, and its growth rate that replaced interest rates as the key determinant of prices, output and economic activity. In the classical tradition, they argued (with supporting empirical evidence) in favour of a one to one link between money and aggregate economic activity in the long term.

The task of delineating the basic framework for Islamic microeconomics is made easier if one judiciously applies the versatile Hicksian analytical tools with appropriate adjustments and modifications. It will be shown that once the IS-LM analytical techniques are recast in an interest-free system, little if any, of the explanatory power is lost. An alternative approach would be to devise a completely new set of analytical tools to demonstrate macroeconomic processes in an Islamic economy. However, the rationale for using Hicksian analysis may be found in the fact that thus far Islamic economists have unhesitatingly used Marshallian or neo-classical analysis in explaining most economic phenomenon in Islamic economies.

In the following sections, I present the outlines of a macroeconomic model for an Islamic economy, first, in an extension of the static Hicksian IS-LM setting and next, within a dynamic framework that allows for long-run equilibrium analysis in a steady state.

3. THE MARKET FOR GOODS AND SERVICES

First, it is necessary to state the behavioural and institutional assumptions that form the basis of an Islamic economy and society. These are:

(a) A majority of individuals believe in Islam and follow its precepts and practices as laid down in the Qur'an and Sunnah.

(b) The state pursues economic and social goals within the broad guidelines provided by the Qur'an and Shariah.

(c) The institution of Zakah exists as an integral part of the economic structure. Zakah is a tax on non-human wealth levied at a fixed proportion (2.5%) of net worth.*

(d) Riba or any form of interest on credit is forbidden.

(e) The banking system intermediates between savers and investors through the offering of 'profitshare'.

These assumptions are expected to have a unique impact on the nature of aggregate demand giving the Islamic

* Zakah is assessed not only on wealth but also on current income in some cases (Ushr, for example). Its rate also differs. (ED)

economy certain distinctive features even within a generally demand-based system.

The building blocks for the model of a goods market comprises the consumption, the investment function and the government expenditure function. The specification of each will be discussed in turn.

Consumption Function: The consumption function in general functional form may be written as

$$C = C(Y, W) \quad \partial_c/\partial y > 0, \partial_c/\partial w > 0. \dots(1)$$

where Y represents real income, and W , non-human wealth like earnings from physical and financial assets (e.g. *musharakah* certificates), and any idle saving balances. It is the component of income arising from non-human wealth that is subject to *zakah*. Note that there is no argument in the consumption function corresponding to the interest rate as the only form of consumption loans allowed in an Islamic economy are interest free (*Qrdhe-e-Hasan*), and there is no parallel of interest-sensitive bond market in this economy.

The specific linear equation describing the consumption function may then be written as

$$C = C_0 + c(1-t)Y + a(1-z)W \quad \dots\dots(2)$$

where C_0 is subsistence level consumption⁵. The induced consumption expenditures result from current income (Y) net of taxes (t) and household real wealth (W), net of *zakah* (z). Household consumption is expected to be kept within the moderate limits set by the Shariah (See M. Arif, 1985, p. 95). Since *zakah* is levied on net worth (which includes past savings), the effect of accumulated wealth on consumption is described by a $(1-z)W$. 'c' is the conventional marginal propensity to consume out of current income while 'a' is the similar coefficient related to wealth.

A word about consumption behaviour in an Islamic economy is in order. The Qur'an has repeatedly denounced any tendencies towards over consumption by the public, describing such inclinations as extravagance or profligacy⁶. Moderation in individual consumption habits has been recommended while spending "above and beyond the moderate level is considered '*israf*' and is condemned". (See Dr. Monzer Kahf, 1978, p. 25).

Investment Function: The investment function is a critical element in the building block and a proper understanding of the determinants of investment is essential. The incentive to invest in an enterprise is provided by the expected rate of return, i.e. the profit rate. Activities that offer the prospect of higher profits will obviously attract more resources than those that offer lower returns. The rate of profitshare set by the banks serves as the financial cost of investible funds* and could deter investments if set at a level too high. However, the central bank is in a position to regulate the rate of profitshare in order to ensure that investment incentives are not unduly hurt since current and future levels of economic activity are linked to investments. Although the rate of profitshare is crucial in investment decisions it is not necessarily the critical variable to spur or deter investments. A low rate of profitshare is unlikely to stimulate investments if expected profits are themselves low. On the other hand, a high rate of profitshare need not deter investments if the expected rate of profit is high. A simple example will clarify this point. Suppose an investor makes a profit of \$20 on an investment of \$100. His net profits are 8% if the rate of profitshare is 5%. On the other hand, if his profit were only \$10, even a 25% profitsharing rate leaves him with a net return of only 7.5%. It may be mentioned in passing that the regulatory role of the central bank will always be there to keep profit-sharing rates from rising beyond reasonable limits. The central bank, however, is unable to determine the rates of return, a variable solely determined by market forces.

The general form of the investment function may then be written as

$$I = I(p), \quad \partial I / \partial p > 0 \quad \dots(3)$$

where p is the expected (realized) rate of profits. In its linear form, it is

$$I = I_0 + e(p) \quad \dots(4)$$

I_0 represents autonomous investments, and $e(p)$, the induced component.

* How can profit ratio be treated as the financial cost of investable funds when the bank makes a direct investment in production activity? In case the writer holds this opinion, it should be argued (ED).

Government expenditure function: The government expenditure function must incorporate the Islamic notion of a welfare-oriented government pursuing goals not only of economic development but of distributive justice and the amelioration of distress among its people. One of the outcomes of such policies implies countercyclical changes in public spending, stipulated in the following equation:

$$G = G_0 + f(\bar{Y} - Y), f > 0 \quad \dots (5)$$

where G_0 is the exogenous level of government spending, \bar{Y} is a certain target level of output (full employment), and f is a positive adjustment coefficient. Thus the expression, $f(\bar{Y} - Y)$ incorporates the countercyclical nature of public spending. In its general form, the function may be expressed as

$$G = G(Y), dG/dY > 0 \quad \dots (6)$$

Equilibrium: Setting aggregate demand equal to national income, we arrive at the equilibrium condition

$$Y = C + I + G \quad \dots (7)$$

With appropriate substitution of (2), (4) and (5) in (7), and collecting terms, we obtain the equilibrium solution for the goods market as

$$Y^* = m[A_0 + a(1-z)W + e(p) + f(\bar{Y})] \quad \dots (8)$$

where m = Keynesian autonomous spending multiplier and $A_0 = C_0 + I_0 + G_0$

GG Curve: We now proceed to develop a simple model on the lines of the Hicks-Keynes (IS-LM model). The model draws heavily from the IS-LM in that it retains the crucial Keynesian assumption that aggregate demand determines output. Any disequilibrium in the goods market is resolved through an inventory adjustment process that brings supply in line with demand. Unlike the IS-LM however, this model highlights the interaction between the profit rate and output as aggregate demand is driven by variations in the profit rate.

Setting the equilibrium in generalised functional form, we have

$$Y = C(Y, W) + I(p) + G(Y) \quad (9)$$

By total differentiation, and keeping wealth unchanged ($W = \bar{W}$), we get $dY = (\partial C/\partial Y)dY + (\partial I/\partial p)dp + (\partial G/\partial Y)dY$, where $\partial C/\partial Y > 0$, $\partial I/\partial P > 0$ but $\partial G/\partial Y < 0$

$$\text{Solving, } \frac{dY}{dP} \Big|_{GG} = \frac{dI/dp}{1 - \frac{\partial C}{\partial Y} - \frac{\partial G}{\partial Y}} > 0$$

The same holds from (8), which gives

$$\frac{dY}{dp} \Big|_{GG} = me > 0$$

Thus the GG curve has a positive slope in $p - Y$ space as shown in Fig. 5.1

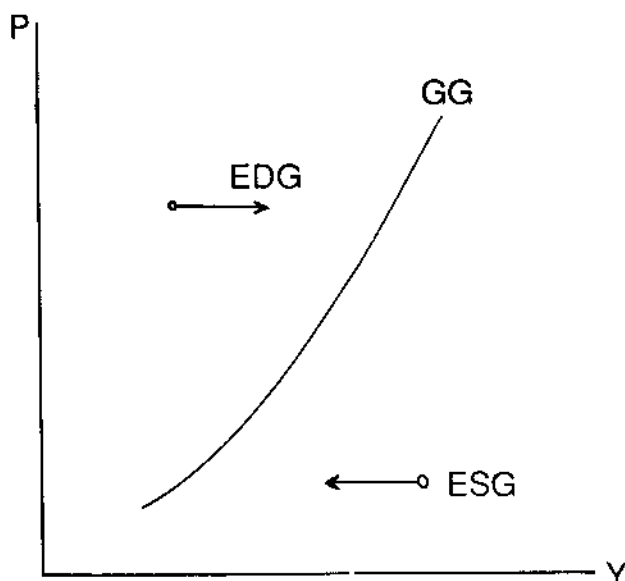


Fig. 5.1

Points above the GG curve represent excess demand while points below indicate excess supply of goods. Changes in fiscal policy would be reflected by movements of the GG curve.

4. MONEY MARKET AND PORTFOLIO BALANCE

Since the impact of interest-free banking is felt directly in the money market, researchers have paid considerable attention to the operation of this market. Controversy exists over the form of the demand for money function,

particularly with respect to the existence of speculative demand for money. Metawally (1981) and al Jarhi (1981) have produced conflicting evidence on the existence of speculative demand for money in Muslim countries. The former finds no evidence while the latter reports significant evidence of its existence. It is clear that speculative demand, if any, would have to be based on some average rate of profit on investment which could also be reflected on the return on instruments such as *musharakah* certificates.

To my mind, a transactions demand model following Baumol's (1952) inventory approach would adequately serve our purpose as such a money demand function incorporates both the notion of the opportunity costs of holding money as well as the convenient services money provides its holders. Once again, it is the profit rate and its change that reflect the opportunity costs of holding money. At higher expected rates of profit, individuals would seek to economise on their holdings of transactions deposits as it becomes more costly to do so. Income and the profit rate thus become the main arguments of an inventory-type money demand function as follows⁷

$$\frac{M^d}{P} = M\left(\frac{Y}{+}, p\right), \quad \frac{\partial M}{\partial Y} > 0, \quad \frac{\partial M}{\partial P} < 0 \quad \dots\dots (10)$$

In its linear form,

$$\frac{M^d}{P} = gY - hp, \quad g > 0, h > 0 \quad \dots\dots (11)$$

Assuming the central bank sets money supply exogenously at \bar{M} , we have money market equilibrium given by

$$\frac{\bar{M}}{P} = M(Y, p) \quad \dots\dots (12)$$

or

$$\frac{\bar{M}}{P} = gY - hp \quad \dots\dots (13)$$

From (12), by total differentiation, we have

$$\frac{dY}{dp} \Big|_{MM} = - \frac{\partial M / \partial p}{\partial M / \partial Y} > 0$$

Likewise, from (13), we obtain $\frac{\partial Y}{\partial P} = \frac{h}{g} > 0$

Thus we have a positively sloped MM curve representing money market equilibrium in p-Y space (Fig. 5.2). Points to the right of the MM curve indicate excess demand for money (EDM), while points to the left represent excess supply of money (ESM). Note that the profit rate is impacted by changes in the money market,..... an excess supply of money reducing the financial rate of return while an excess demand causing it to rise.

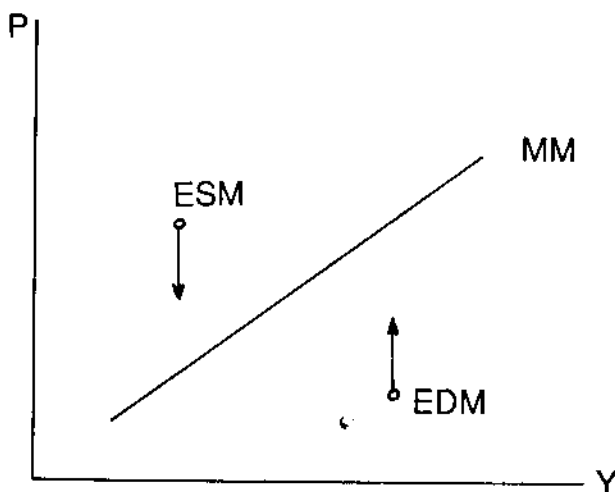


Fig. 5.2

5. GENERAL EQUILIBRIUM

In this section, we propose to investigate the process of simultaneous determination of equilibrium in the goods and money market. The nature and properties of this general equilibrium will also be under scrutiny.

In this interest-free economic system, the profit rate has emerged as the critical variable linking the goods and money markets. The algebraic solution of the system requires substituting the solution of 'p' from (13) into (8). Equation(8) could be first simplified, without loss of generality, by

lumping the terms with W and \bar{Y} into A_0 , yielding the following modified equation:

$$Y = m (A_0 + ep) \quad \dots (14)$$

Substituting the value of p into (14), collecting terms and solving for Y yields:

$$Y = \frac{mh}{h-meg} \cdot A_0 - \frac{me}{h-meg} \cdot \frac{\bar{M}}{P} \quad \dots (15)$$

Where A_0 and \bar{M}/P represent fiscal and monetary policy indexes. The implications of (15) is that, given a level of money supply, fiscal expansion can raise output. However, monetary expansion, by reducing profit rates, can cause output declines instead. This calls for complete co-ordination between fiscal and monetary authorities to achieve the goals of economic policy. If the objective is to raise output, the ideal combination would be an expansionary fiscal policy associated with an easy money policy to keep profit rates from rising to 'unethical levels'.

Uniqueness and Stability of Equilibrium: The uniqueness and stability of equilibrium may be studied graphically under two alternative situations, namely,

Case I: GG curve is steeper than MM

$$\text{i.e.} \quad \left. \frac{dY}{dp} \right|_{GG} > \left. \frac{dY}{dp} \right|_{MM}$$

Case II: MM curve is steeper than GG

$$\text{i.e.} \quad \left. \frac{dY}{dp} \right|_{GG} < \left. \frac{dY}{dp} \right|_{MM}$$

Case I: In Fig. 5.3, a unique equilibrium is achieved at E_1 by the intersection of GG with MM such that the slope of the GG curve is greater than the slope of MM. This yields the most desirable comparative statics properties and a convergent equilibrium for any situation of disequilibrium. The adjustment process and local dynamics are indicated by arrow in Fig. 3 and summarized, in accordance with Dornbusch and Fischer (1984), in Table 1.

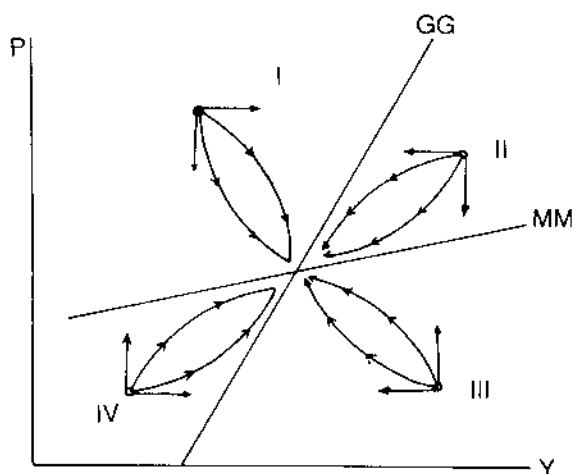


Fig. 5.3

Table 1

Region	Disequilibrium	Adjustment	Convergent or Divergent
I	EDG, ESM	$Y \uparrow, P \downarrow$	Convergent
II	ESG, ESM	$Y \downarrow, P \downarrow$	Convergent
III	ESG, EDM	$Y \downarrow, P \uparrow$	Convergent
IV	EDG, EDM	$Y \uparrow, P \uparrow$	Convergent

Case II: The case where MM is steeper than GG still produces a unique equilibrium but convergent equilibria in two of the four regions of disequilibrium as shown in Fig.4 and summarized in Table 2.

Fiscal or monetary disturbances that might land the economy into either regions II or IV, could lead to explosive oscillations. Thus policy analysis under conditions of general

equilibrium would have to be limited to the situation described in Case I or within regions I and III of case II.

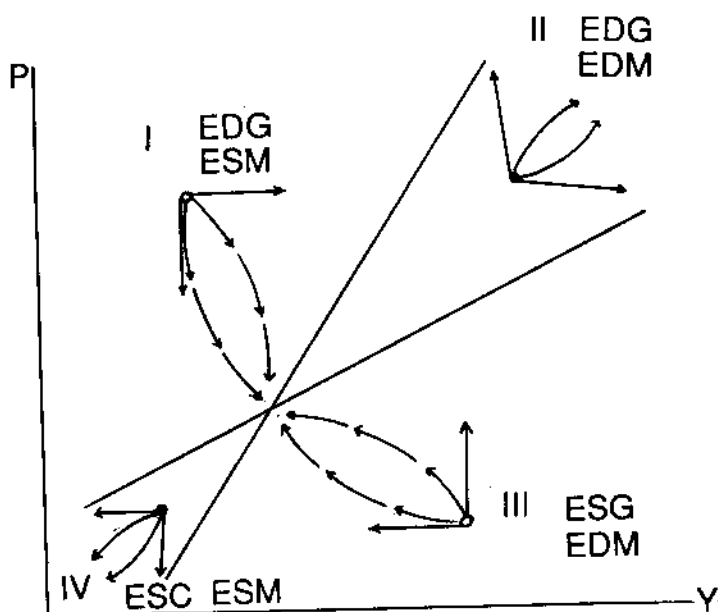


Figure 5.4

Table 2

Region	Disequilibrium	Adjustment	Convergent or Divergent
I	EDG, ESM	$Y \uparrow, P \downarrow$	Convergent
II	EDG, EDM	$Y \uparrow, P \uparrow$	Convergent
III	ESG, EDM	$Y \downarrow, P \uparrow$	Convergent
IV	ESG, ESM	$Y \downarrow, P \downarrow$	Convergent

6. MACROECONOMIC POLICIES AND THEIR IMPACT

Having developed the basic framework for macroeconomic analysis in an Islamic economy, in this section, an attempt will be made to analyse the combined as well as

unilateral consequences of initiating fiscal or monetary policies with an eye on short-term stabilization. A subsequent model will provide the scope for steady state analysis and dynamic adjustments.

Fiscal and monetary institutions in Islamic economies (as well as developing economies) in large part draw their authority from government. Regardless of the consequences of their actions, there is greater co-ordination of policies and closer commitment to the goals and objectives of policies than is to be found in the developed market economies. In the United States, for example, the monetary authority (Federal Reserve Board) acts independently of the fiscal authority (the Congress) in taking monetary actions that affect economic activity. Although close co-ordination and compatibility of goals is expected, it is not surprising that often fiscal and monetary policies have been at cross purposes with each other.

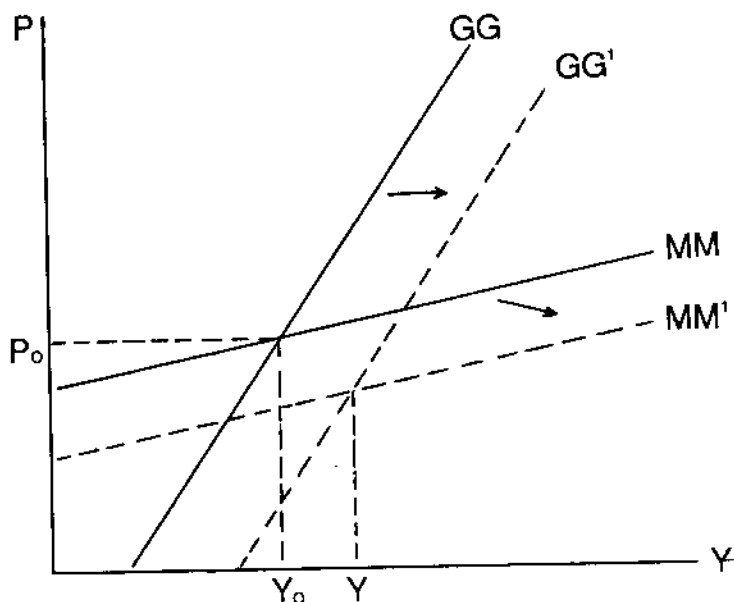


Fig. 5.5

The macroeconomic framework developed here calls for a significant degree of co-ordination between monetary

and fiscal authorities in order to achieve the goals of high employment and economic growth. This is evidenced from the graphical analysis presented in Fig. 5.5.

Since debt-financed fiscal expansion is non-existent in the Islamic economy (the government cannot pay interest on its debt), monetary expansion (MM to MM') is a concomitant of fiscal expansion (GG to GG'). The resultant increase in output occurs with little or no increase in the profit rate. In the absence of monetary accommodation (as in the case of a balanced budget fiscal expansion), it might be difficult to keep profit rates within 'ethical' limits. On the other hand, unilateral monetary expansion could depress profit rates so much as to cause a recession. Therefore, such unilateral action by monetary authorities is unwarranted. The foregoing analysis also makes it clear that in an Islamic economy, macroeconomic policy would most likely consist of a fiscal monetary policy mix directed towards achieving the desired economic results.

7. STEADY STATE ANALYSIS AND DYNAMIC ADJUSTMENTS

We now proceed to extend the preceding analysis to cover the economy's long run equilibrium in the steady state as well as trace the possible adjustment paths following changes in the policy environment. The basic behavioural assumptions about the goods and money markets will be maintained. Whereas the previous model took no note of price changes, the ensuing model specifically incorporates a relationship between inflation and wage-price pressure in the neo-Keynesian tradition.

$$Y^d = cy + ep + f \quad \text{.....(16)}$$

Equation (16) is the aggregate demand equation expressed in logarithmic form and all variables are in real terms. Aggregate demand is expressed as a function of real income, the profit rate, and a fiscal index, f , that ideally represents balanced budget changes in government spending.

$$\dot{Y} = \alpha (y^s - y) \quad \text{.....(17)}$$

Equation (17) describes the evolution of output through a process of inventory adjustment.

$$m = gy - hp \quad \dots(18)$$

Equation (18) describes money market equilibrium.

$$\dot{\Pi} = \beta (y - \bar{y}) \quad \dots(19)$$

$$\dot{m} = \mu - \pi \quad \dots(20)$$

(19) is a neo-Keynesian model of inflation, while (20) explains movements in real balances in response to changes in nominal money growth and inflation. At this point, a simplification is in order. In (19), normalization, by setting $\bar{y} = 0$, yields $\pi = \beta y$. Moreover, assuming zero money growth to begin with, $\mu = 0$, we get (19a),

$$\dot{m} = -\pi = \beta y \quad \dots(19a)$$

The model is closed by making a very simple assumption, that of perfect foresight, about the profit rate, giving

$$p = p^e \quad \dots(21).$$

[The point E in Fig. 5.5 is a saddle point equilibrium, representing the economy's long run equilibrium in the steady state. The line, $y = 0$, is the dynamic version of the GG curve seen earlier, while $\dot{m} = 0$ at \bar{y} is a simple formulation of the MM curve. From a point of disequilibrium, the dynamic adjustments are both notable and interesting. The economy's dynamic behaviour is summarized in (17) and (20) or (20a). The trajectories of motion are described by arrows in Fig. 5. The time paths of adjustment suggest that dynamic analysis would have to be limited to only two regions that yield convergent oscillations.]

Starting from A, a fiscal expansion raises profit rate, spending and output, setting off convergent motions towards full employment equilibrium at E, as demonstrated in Fig. 5.6. Accommodating monetary expansion would, in this case, accelerate the speed of adjustment to the steady state. Convergent oscillations are evident in the event of fiscal contraction as at B.

8. SUMMARY AND EXTENSIONS

No doubt this has been a preliminary exercise at macroeconomic model-building for an Islamic economic system. The interactions between money, spending, output and the profit rate have been highlighted for a system that lacks a key conventional macroeconomic variable, the inte-

rest rate. The analytics of macroeconomic theory and policy have been examined using standard keynesian tools suitably modified to conform to the workings of an interest-free economic system. A critical outcome of the monetary-fiscal policy experiment was the realization of the close interdependence of the two policy instruments and the need for complete co-ordination between monetary and fiscal institutions for the achievement of short or long-term economic goals.

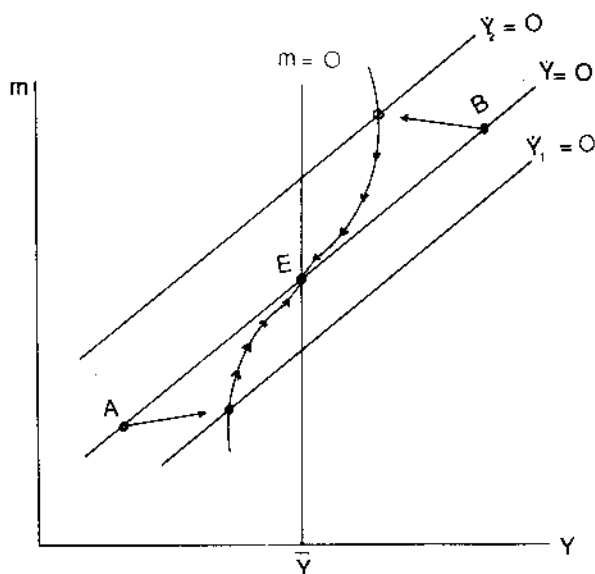


Fig. 5.6

Clearly, several logical extensions to this model can be foreseen. The emergence of the profit rate as the key variable in the Islamic macroeconomic system raises the need for further investigations into the formations of profit expect-

tations and the specific influence of profit-sharing ratios on investment behaviour of aggregate supply in response to changes in the profit rate needs to be incorporated into the model and should be the next item on the research agenda.

I conclude with the belief that interest and commitment on this subject is growing rapidly and significant productivity may be witnessed in the near future provided sufficient encouragement is forthcoming from institutions entrusted with the responsibility for fostering research in Islamic economics.

NOTES

1. Remarkably, a parallel of this phenomenon exists in the developed Western societies in the form of 'loan sharking', — an acknowledged activity popular with the criminal underground.
2. Even A. Yusuf Ali (1934), whose English translation of the Holy Qur'an is perhaps the most widely read, suggests in a footnote to (II. 275), that interest on credit provided by the banking system should not be regarded as usury.
3. At this point, the assumption is one of perfect foresight, for simplicity, such that $p = p^e$. It is possible to introduce some form of expectations, adaptive or rational without losing sight of the main focus of the paper.
4. Note that db is unlikely. db is the logical outcome. At any given time, however, d and b are pre-determined, while the profit rate is the only variable that ultimately determines the returns of the entrepreneur, the bank and the depositors at the end of the time period.
5. The rationale for this may be found in M. Arif (1405/1985, p.95). "If the individual is unemployed, or his income is below subsistence, then the *Bait-ul Mal* will support him with the means to meet the subsistence requirements".
6. Al Qur'an, 17: 29, 6:141
7. Tobin's (1958) portfolio balance approach would be relevant for an Islamic economy that has a highly developed stock market as an integral component of the financial system.
8. Recently (1980-82), the Federal Reserve Board pursued restrictive anti-inflationary monetary policy while the U.S. Congress was enacting expansionary fiscal policies through higher spending and rising budget deficits. The consequence was the U.S. recession of 1981-82, the deepest since the depression of 1930s.

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